



# ***The Role of Hydrogen and Electric Drive in California's Energy Future***

California Energy Commission

Oct. 12, 2004



# Energy Commission Activity in Hydrogen

- Energy Commission has been involved with hydrogen development and use in recent years
- CA Fuel Cell Partnership
- CA Stationary Fuel Cell Collaborative
- Governor's Hydrogen Highway





# Energy Commission Programs

- Public Interest Energy Research (PIER)
- Co-funded several hydrogen fueling stations (Santa Clara VTA, LAX, AC Transit)
- FCV Demonstration with two OEMs as part of US DOE's FreedomCAR program



# Energy Commission

## Electric Vehicle Programs

- Inception of electric vehicle consortium – Calstart
- G-Van demonstrations in Oakland, Yosemite, and Santa Rosa
- Electric buses and shuttles, including school buses
- Solar vehicle demonstrations at universities
- Education and consumer surveys
- Fuel cell shuttle buses at SMUD



# Working Group Formation

- CEC held two meetings in April 2004 to form a Hydrogen/Electric Drive working group
- Participation was poor
  - One of our conclusions was that there are several other hydrogen-related efforts that may compete with our idea to form a new working group



# Working Group

- Moreover, we concluded that hydrogen and electric drive have a unique timeframe compared with other non-petroleum fuels
- By 2020, we anticipate that less than one percent hydrogen fuel displacement of petroleum fuels



# When will Hydrogen be Viable?

- The CEC and many others view hydrogen as a very long term proposition
  - e.g., National Academy of Sciences Report assumes 2015 as a possible introduction of hydrogen fuel cell vehicles



# When will electric drive technology be viable in the light duty vehicle market?

- Consumer studies in 1997 predicted electric drive technology would not reach maturity in the light duty vehicle market until 2015.
- The unavailability of suitable product will continue to be a serious impediment if auto manufacturers are not committed to producing the vehicle – a road block especially for plug-in hybrids.





# Our Recommendation

*Rather than...*

- Establishing a displacement goal for H2
- Growing a working group to encourage H2 use
- Maintain an ongoing group

We will put our resources with the Governor's Hydrogen Highway Network and the California Fuel Cell Partnership. We also welcome ideas on to increase interest in plug-in hybrids.



# Conclusion

We welcome ideas on how to develop  
and grow a market for hydrogen

Hydrogen Highway Network  
[www.hydrogenhighway.ca.gov](http://www.hydrogenhighway.ca.gov)